Abstract

A thyristor-based semiconductor device exhibits a relatively increased base-emitter capacitance. According to an example embodiment of the present invention, a base region and an adjacent emitter region of a thyristor are doped such that the emitter region has a lightly-doped portion having a light dopant concentration, relative to the base region. In one embodiment, the thyristor is implemented in a memory circuit, wherein the emitter region is coupled to a reference voltage line and a control port is arranged for capacitively coupling to the thyristor for controlling current flow therein. In another implementation, the thyristor is formed on a buried insulator layer of a silicon-on-insulator (SOI) structure. With these approaches, current flow in the thyristor, *e.g.*, for data storage therein, can be tightly controlled.